Naval Air Station
South Weymouth, MA
Restoration Advisory Board
Summary of RAB Meeting – August 11, 2005

NAS South Weymouth Website: http://nas-southweymouth.navy-env.com

1. INTRODUCTIONS/ APPROVAL OF PRIOR MEETING MINUTES

Ms. Susan Jeghelian, MA Office of Dispute Resolution, and RAB meeting facilitator, opened the meeting at approximately 7:00 PM. She requested that all attendees, including RAB members, regulators, and audience members, introduce themselves. The sign-in sheet for the meeting is provided as Attachment A to this meeting summary. S. Jeghelian asked if everyone had time to read the meeting notes from the prior RAB meeting and asked for comments on them. There were no comments on the June 2005 RAB meeting notes; the notes will stand as issued. In addition, S. Jeghelian encouraged those with ideas for future RAB meeting topics to bring them to the attention of the RAB co-chairs.

S. Jeghelian reviewed the guidelines for the meeting. She reminded the participants when asking questions to wait to speak until they are acknowledged, to state their names and affiliations, and to speak into the microphone when they have questions.

The Agenda for the meeting and the Action Item Tracking List are provided as Attachment B to this meeting summary. S. Jeghelian then noted that in accordance with the agenda, the presentation (the Basewide Assessment Update) would be followed by the Updates and Action Items portion of the meeting.

2. PRESENTATIONS

S. Jeghelian asked D. Barney, Navy, to introduce Lisa Yeutter, Navy, who was presenting the Basewide Assessment Update. The following paragraphs summarize the presentation and include references to selected presentation slides in Attachment C. The complete presentation is available on the NAS South Weymouth web site **http://nas-southweymouth.navy-env.com**.

L. Yeutter introduced herself and two individuals from ENSR, Christine Archer and Curt Weeden, who contributed to the presentation and are involved in the basewide assessment work.

The Basewide Assessment Work Plan is in draft final form and is currently undergoing review by the regulators. L. Yeutter provided an overview of the contents of the Work Plan and explained the rationale for the basewide assessment. The environmental activities at the base initially focused on individual

investigations at various IR and EBS sites and included risk assessments and evaluations of lower trophic level impacts in the vicinity of each specific site. Questions arose about potential impacts to higher trophic level wildlife with wider habitat ranges on the base. This led to the development of the ecological risk assessment component of the basewide assessment scope. Continuation of investigations that began under the EBS program at French Stream and Old Swamp River was determined to be appropriate for inclusion in the watershed evaluation component of the basewide assessment scope since both water bodies cross base property and French Stream in particular flows near a number of identified IR, EBS, and MCP sites on the base. Groundwater level measurements around the base were collected in 1999 and a basewide groundwater contour map was developed. The need to update these data and develop an updated basewide groundwater contour map led to the inclusion of the hydrogeological evaluation component of the basewide assessment. Concerns about the orange floc in French Stream led to the inclusion of the geochemical component of the basewide assessment scope. These four components and the objectives of the basewide assessment are summarized on Slide 2. There are currently 28 MCP sites, 117 EBS sites, and 10 IR, or CERCLA sites, on the base.

There is a substantial amount of data that has been collected during the investigations conducted across the base under various environmental programs. The data sets include multiple rounds of data from groundwater monitoring wells, and surface water, sediment and soil sampling locations (Slide 3). The Navy determined that an iterative approach, with frequent interaction between the Navy and the regulators, was appropriate for the basewide assessment. This approach (Slide 4) would include 10 steps, from compiling the existing data, collecting and analyzing new data, conducting additional field work to fill any identified data gaps, to completing a Basewide Report.

The Hydrogeological Evaluation would update the 1999 groundwater study and provide an understanding of groundwater flow across the base in both overburden and bedrock units. This component of the work would include a synoptic water level gauging round and bedrock characterization (Slide 5). This information will also be available for use in better understanding the hydrogeology at the various specific sites where investigations are being conducted on the base.

The Watershed Evaluation will focus on the two major watersheds, French Stream and Old Swamp River, and evaluate risks to human health or the environment from exposure to surface water and sediments (Slide 6). This scope will rely primarily on existing data and includes a screening level human health evaluation and a lower trophic level evaluation of aquatic and benthic receptors. The French Stream investigation will include tributaries and drainage ditches that flow to the stream.

The Geochemical Evaluation will evaluate the orange floc. Based on a literature review, the current hypothesis is that iron-rich groundwater when anoxic, or oxygen deficient, will have iron in solution. However, when the groundwater discharges to a surface water body and becomes oxygenated, the iron

undergoes a chemical reaction to form iron hydroxide, which is insoluble and precipitates out of the water (Slide 7). Another hypothesis is that bacteria in the environment use iron for energy; this process oxidizes the iron which also makes the iron insoluble and precipitates out. To test these hypotheses, chemical tests will be performed on the floc to identify contaminants of potential concern and microbiological tests will be performed to identify the types of bacteria present. Physical evidence will also be gathered, including observations of the floc and conditions in the stream where the floc is found, to determine if the floc may block light to benthic organisms and thus result in ecological impacts. This evaluation will answer four questions (Slide 8): the composition of the floc, source of constituents in the floc, causes of floc formation in French Stream, and the potential ecological impact.

The Higher Trophic Level Evaluation will focus on wildlife with large home ranges that are known to be part of the food chain and also to be present on the base (Slide 9). These animals include: Red Fox, coyote, American woodcock, Red-tailed Hawk, Belted Kingfisher, and raccoon (Slide 10) and are species appropriate to assess potential risks due to persistent, bioaccumulative, and toxic chemicals. This evaluation will help identify areas that are good habitats and potentially impaired habitats for these species.

A focused field program will be conducted beginning in the fall of 2005. The program will include: bedrock mapping, water level measurements from monitoring wells and surface water using piezometers and staff gauges, and monitoring in French Stream (Slide 11). Sediment sampling may be performed. Seasonal changes in the floc will be determined by observations completed in fall 2005 as well as spring 2006. Various tests will be used to determine the interaction between the groundwater and surface water, e.g. locations where groundwater discharges to surface water.

In summary (Slide 12), the basewide assessment will focus on French Stream and Old Swamp River with a focused field program to be initiated in fall 2005. The draft final Work Plan is in review by the regulators.

S. Jeghelian asked if there were any questions on the presentation.

J. Cunningham asked for clarification on a number of terms. The terms and the Navy's definition of each follow: "iterative" – a phased approach; "synoptic" – taken all together, at the same time; "benthic organisms" – invertebrate organisms that live in the stream sediments. L. Yeutter clarified that the photographs of the animals (Slide 10) represent animals known to be present on the base, but the photographs weren't taken on the base.

M. Bromberg asked if the French Stream investigation would go beyond the base boundaries. L. Yuetter responded that the study is focusing on the base first: the Navy will then assess the need for other work. She also clarified that no new organisms will be collected; historical information will be used. The

available data are from tissue samples collected at various sites that have been investigated to date and do not represent the entire length of French Stream. M. Bromberg commented that the southern end of French Stream may have fewer living organisms than in the upstream end of the stream. L. Yeutter confirmed that the food chain evaluation will use existing data for risk assessment calculations. She noted that while little new data will be collected, this is the first time that all the existing data have been evaluated on a basewide scale.

L. Larrabee asked if mercury is included. L. Yeutter confirmed that most samples have been analyzed for mercury and thus mercury data would be included in the compilation of historical data. L. Larrabee stated that she'd had some technical people look at the Old Swamp River data; they noted that there were no mercury analyses. B. Olson responded that mercury was not identified as a contaminant of potential concern for the EPA's Old Swamp River study. The study focused on metals of concern due to base activities and there is no evidence of a problem with mercury due to base activities. He stated that EPA would accept comments on the Old Swamp River data and that EPA plans to conduct additional work on French Stream. That work will focus on impacts of the base on the streams but will not include every analyte. He noted that mercury is a problem generally in the region and advisories are in place due to mercury levels. EPA would need to know the specific questions L. Larrabee's scientists have concerning the data.

In response to a timing question from M. Bromberg, B. Olson stated that EPA plans to conduct work at French Stream off the base property sooner rather than later. A more extensive program may follow with assistance from USGS. EPA plans to obtain a sample of the floc. M. Parsons asked if there are changes in the floc in the two branches of French Stream. L. Yeutter responded that the Navy does not know yet, but will check both branches of the stream. They will compare the numbers of benthic organisms to a reference area since the stream is so channelized.

M. Parsons asked about the PCB-eating mice. M. Krivansky noted that the long-term monitoring plan for the RDA will include monitoring mice tissue for PCBs. She expressed a concern that the monitoring wells within the base boundaries do not appear to include many deep wells and that there are few existing deep wells between the FFTA site and Old Swamp River. L. Yeutter responded that the well depths are established based on the objectives of each specific site investigation. C. Weeden commented that for some sites the scope of the investigations may only require shallow wells. D. Barney responded to M. Parsons' question about contamination in a deep well at AOC 108 (now referred to as the SRA) by noting that the contamination was initially seen in soils and the highest concentrations were at shallow depths.

M. Byram asked about bedrock fractures. L. Yeutter and C. Weeden responded with an explanation of the planned fracture trace analysis using aerial photographs to identify bedrock outcrops and infer the location of fractures. In response to a related question, L. Yeutter stated that fracture trace work has been

completed at sites where it was determined to be necessary. D. Barney noted specifically that such work was completed at Buildings 81 and 82, the SRA, and FFTA, since at those sites such bedrock tests were determined to be warranted. In response to comments about a need for more bedrock wells to check if contamination may be migrating off the base, D. Barney stated that the Navy's approach for investigations at specific sites always focuses on the potential source area and an area around the site large enough to determine the nature and extent of contamination associated with the potential source area. Wells are installed as necessary based on the site-specific requirements for each investigation.

L. Corin Ash provided follow up information to the discussion of the PCB cleanup level during the AOC 8 presentation at the June 2005 RAB meeting. She had collected information which recommended a 0.33 ppm PCB cleanup level in soils for residential settings rather than the 1 ppm cleanup limit used at AOC 8. She noted that new research indicates that recommended allowances and exposures of young children to certain toxins should be lower than the limits that have been established based on adult exposure studies. She added that there is little data on impacts of PCBs on children. The Navy and EPA clarified that the 0.33 ppm number is not a cleanup level but is a screening level used to evaluate sample results in the standard EPA risk assessment procedure. B. Olson noted that EPA policy has established that the 1 ppm cleanup limit for PCBs is safe. He also noted that this policy is in place in EPA Regions I and III and that the Massachusetts PCB cleanup level is 2 ppm. B. Olson stated that he is confident that EPA is aware of the studies mentioned by L. Corin Ash regarding PCB exposures in children and that the 1 ppm EPA level is very conservative. L. Corin Ash commented that the research she referred to is very recent and that she wanted to make people aware of these issues.

In response to questions about the Navy's position not to install monitoring wells off the base, or test French Stream off the base, D. Barney stated that the Navy has not committed to new wells in the basewide assessment. However, since the basewide assessment is an iterative process, the Navy will consider additional wells as needed. He also stated that the Navy would first need to determine if additional monitoring wells are required and at what locations. Generally wells are placed extending outward from an identified source area. Concerns were again expressed about the lack of deep wells near the fence line. B. Olson stated that EPA was testing areas off the base while the Navy is checking source areas on the base.

Regarding French Stream, B. Olson stated that EPA feels that the iron (potentially contributing to the floc) is naturally occurring and is not a contaminant source from the base. The questions that EPA hopes their testing will answer are: why is the iron is coming out of solution, what is contributing to the anoxic conditions in the groundwater, and whether base activities have resulted in a change in the chemical conditions thus contributing to floc formation. M. Parsons noted that the conditions in Old Swamp River, which is also high in iron, are not as bad as French Stream and since the conditions in French Stream are so different, there must be something causing the floc.

In response to a question about "complex modeling," L. Yeutter and C. Archer explained the anticipated range of risk assessments that are planned for the higher trophic level risk assessment. This risk evaluation will begin with simple, or deterministic analyses, and progress to more complex, or probabilistic analyses, if required.

M. Parsons asked if the Navy plans to catalog all of the species found in the benthic community. L. Yuetter responded that due to the altered and channelized nature of French Stream the Navy doesn't expect to find a high variety of benthic organisms but noted that the variety may be greater in the more natural sections of the stream. R. Sugatt indicated that the compiled data on species and chemical parameters for the entire length of French Stream will be used to develop hypotheses about the big picture for the stream. He stated that the complex interactions will be evaluated far enough to determine if there are any issues regarding base-specific impacts. If no risks are identified, the evaluation will not proceed further. A. Malewicz asked about collecting dissolved oxygen (DO) data. L. Yeutter indicated that the existing data likely includes DO data and the Navy will likely collect additional DO measurements as part of the geochemistry component of the basewide assessment.

M. Bromberg stated that he had observed orange floc near the fuel farm, appearing at the top of a hill and flowing toward the TACAN ditch. D. Barney confirmed that during remediation activities at the fuel farm all pipes were blocked off which likely changed the groundwater flow direction. He also noted that the fuel farm property has been transferred. B. Brandon commented that the area should be evaluated and that fuel remaining in the subsurface may be creating anoxic conditions.

S. Jeghelian asked if there were other questions. There were none. The meeting then moved on to the Updates and Action Items portion of the agenda.

3. UPDATES AND ACTION ITEMS

Ms. Jeghelian then reviewed the three action items listed on the Action Item Tracking List (see Attachment B) for this RAB meeting as follows.

Action Items

1. Turtle Activity Update – L. Yeutter noted that work between April and July involved changing transmitters and tracking turtle movement. In mid-June when the gravid females dig holes for nests, dusk to dawn surveys were conducted. Recently, 3 new box turtles and 5 spotted turtles were found. Turtle surveys have been completed in areas where activities are planned: West Gate Landfill, Sewage Treatment Plant (no turtles), AOC 55C, Small Landfill (1 spotted turtle seen), and AOC 8 (many turtles).

M. Byram noted that there is a vernal pool near the Small Landfill, where a spotted turtle, an aquatic species, was seen. H. Welch asked how they find the turtles. L. Yeutter explained that on hot days the turtles aestivate, digging themselves into leaf litter or sand, so they are difficult to find. The Navy uses meander surveys and radio tracking. She commented that even with a strong radio signal it is often difficult to find the turtles.

2. Check where upcoming RAB meeting times are posted – D. Barney stated that the Navy posts notices in each of the town halls and on the sign at the Route 18 entrance to the base. In addition, a notice is provided to the local newspaper; the notice is not always published. He also noted that the date for the next RAB meeting is included in the minutes and the Weymouth web site.

3. Distribute monthly Navy program status/administrative items update – D. Barney said that the July update was sent to RAB members on August 1, 2005. Extra copies of the update were provided on the table at the back of the room.

S. Jeghelian then asked each of the Leads to provide updates to the list of eight Update Items.

1. Administrative Actions – D. Barney said that he had been in communication with Dr. Knoor. Dr. Knoor indicated that the ALS/MS study will not be completed in time for a fall presentation to the RAB, but a presentation should be ready by the spring. Dr. Knoor offered to provide a written update, which the Navy had not yet received. Once received it will either be attached to meeting minutes or made available at the next RAB meeting.

2. MADEP Update – D. Chaffin, MADEP, stated that the MADEP had approved the RAM plan for FFTA this week. In response to a question from K. Hayes, D. Chaffin stated that the work planned for the FFTA would include test pits and the areas where background concentrations were exceeded would be removed. At the Small Landfill, test pits were completed last month to support the remedial action alternatives analysis. This alternatives analysis is due to MADEP at the end of August.

3. Coast Guard Buoy Facility Update – D. Barney stated he had not received an update from the Coast Guard.

4. IR Program Sites Update – D. Barney referred to the recently mailed July update. A Phase I field program is underway at Building 81. This program includes well inspections and other work to determine the condition of the wells to be used in future field work.

   M. Krivansky stated that at the RDA 95% of the cap construction is complete. Additional excavation is needed and the Navy is working out the scope of work for the subcontractor to complete the cap this fall. The RDA long term monitoring plan will be finalized within a month and then the O&M plan will be finalized. The Navy is talking with subcontractors regarding plans to improve the vegetative cover. K. Hayes asked if the Navy had delineated the extent of PCBs requiring removal. M. Krivansky responded that due to the volume of water near the PCB hot spot, the Navy has collected confirmation samples prior to excavation. These results will be used to determine the area requiring removal. Once the work is completed, the water in the area of the hot spot will be monitored as part of the long term monitoring plan. M. Bromberg asked what volume of material in the hot spot would be excavated. M. Krivansky estimated 25 – 30 cubic yards.

5. MCP Release Areas Update – D. Barney stated that Geo-Cleanse would be at the Jet Fuel Pipeline site during the week of August 15, for a 1 week in-situ chemical oxidation injection event. Following the injection work there will be at least one year of quarterly groundwater monitoring and analysis. The Navy plans to submit a Notice of Intent to the Rockland Conservation Commission before performing the work covered in the FFTA RAM Plan. The samples collected during the June UST removal completed at the south side of Hangar 1 indicated that there had not been any release from the tank. This is therefore a clean closure.

6. EBS Review Item Areas/Various Removal Action Update – D. Barney referred to the July update. The removal action planned at AOC 8 will be completed soon. There will be a soils and debris removal action completed at the AOC 55C debris area in about one month.

7. FOST/FOSL/CDR Update – D. Barney said there were no updates. In response to a question from M. Bromberg, D. Barney stated that the Navy plans to respond to the comments received on FOST IV and will probably re-release FOST IV. He also stated that the Navy does not anticipate a CDR or early transfer.

8. SSTTDC Update – No SSTTDC representatives were available at the meeting; there was no update.

Possible Topics for future RAB Meetings

S. Jeghelian asked if there were any suggestions for topics to discuss for the next RAB meeting. The following topics were suggested:

- West Gate Landfill update
- EPA update on French Stream sampling
- FOST IV
- RDA status
- FFTA status
- EPA off-site activities at French Stream and Old Swamp River. B. Olson indicated that EPA does not plan any additional testing at Old Swamp River.
- Basewide Assessment, after more work is completed.

Conclusion/Next Meeting

The meeting was concluded at approximately 9:15 pm. The next monthly RAB meeting was set for Thursday, September 8, 2005.

ATTACHMENT A

SIGN-IN SHEET

SIGN IN SHEET
RESTORATION ADVISORY BOARD
PUBLIC MEETING

8/11/2005

NAME	ADDRESS	TELEPHONE
DAVE BARNEY	US NAVY	617 753 4656
Phoebe Call	TtNUS	978-658-7899
Susan Jayhelian	MODR	617-287-4047
LORAINE DELLA PORTA	MODR	617-287-4048
Jennifer Lambert	TtNUS	978-658-7899
Jim Young	SSTTDC / KEI	781-682-2187 X102
David Urbann	CH2M Hill	617-515-3804
Curt Weeden	ENSR	978-589-3066
Patty Marcy L-Whittemore	EPA	617/918-1382
D. Chaffin	DEP	617 348-4005
Bryan Olson	US EPA	617-918-1365
James Cola	USGS	617 918 1331
RICHARD SUGATT	US EPA	617 918 1415
Michael Smart	Wey Town Council	
James Cunningham	RAB	781-331-0545

SIGN IN SHEET
RESTORATION ADVISORY BOARD
PUBLIC MEETING

8/11/2005

NAME	ADDRESS	TELEPHONE
Dan McCormack	75 Middle	781-340-5008
Lorraine Larrabee	100 Westminster	781-335-5863
Mark E Krivansky	Navy	6105950567
Paul F. Anderson	Navy CSO	617 753 4658
Mary A. Parsons	Rockland	781-871-3350
W Brandon	EPA	617 918 1391
Jerry Marques	So Wey	
Anne Males	SWNB	290-5659
Mike Bromberg	Rockland	
Mary Dylan	Hingham	
D Madden	MA DEP	617-973-7477
J Foreman	USGS	
Chris Waldron	USGS	
Leslie Jones		781 648 9283
Ken Hayes	Wey RAB	781-335-7605
Verna Hayes	Wey Rab	781-337-9027
Harvey Welch	Weymouth	781-335-6694

SIGN IN SHEET
RESTORATION ADVISORY BOARD
PUBLIC MEETING

8/11/2005

NAME	ADDRESS	TELEPHONE
Leslie Corin Ash	Arlington	lcorinash@rcn.com 781-648-9283
Patricia Schmieg	Medford	17@post.harvard.edu

Action for a Healthy Environment

ATTACHMENT B

AGENDA & ACTION ITEM TRACKING LIST

Naval Air Station South Weymouth Restoration Advisory Board RAB Meeting Agenda South Weymouth, MA

11 August 2005 **Conference Center on Shea Memorial Drive** **7:00 PM**

Agenda Items	Item Lead	Projected Time
1. Introduction, Review of Meeting Notes	Facilitator	7:00 - 7:15
2. Basewide Assessment Work Plan	Navy	7:15 - 7:45
3. Updates and Action Items	Facilitator	7:45 - 8:15
4. Questions, Agenda Items, Next Meeting	Facilitator	8:15 - 8:30

Facilitator: Massachusetts Office of Dispute Resolution: Susan Jeghelian

Restoration Advisory Board (RAB) Members:

Abington: James Lavin, (Alternate: Steve Ivas); Phil Sortin (Alternate: Beth Sortin)
Hingham: no current representation
Rockland: no current representation
Weymouth: James Cunningham (Community Co-Chair); Ken Hayes; Verna Hayes Dan McCormack; Steve White
Navy: Dave Barney (Navy Co-Chair); (Alternate: Mark Leipert)
EPA: Patty Marajh-Whittemore (Alternate: Pamela Harting-Barrat)
MA DEP: David Chaffin (Alternate: Ann Malewicz)

BRAC Cleanup Team (BCT) Points of Contact:

Navy: Dave Barney, BRAC Environmental Coordinator (BEC)/EFA Northeast Remedial Project Manager (617) 753-4656
Email: barneyda@efane.navfac.navy.mil

Mark Leipert, EFA Northeast EBS Project Manager (610) 595-0557, ext. 146
Email: mark.leipert@navy.mil

MA DEP: David Chaffin, Environmental Engineer, Federal Facilities (617) 348-4005
Email: david.chaffin@state.ma.us

EPA: Patty Marajh-Whittemore, Remedial Project Manager, Federal Facilities Section (617) 918-1382 Email: whittemore.patty@epamail.epa.gov

NAS South Weymouth Website: http://nas-southweymouth.navy-env.com

Naval Air Station South Weymouth Restoration Advisory Board Action Item Tracking List

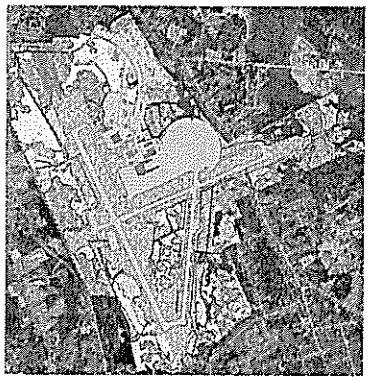
11 August 2005 – Next RAB Meeting

Action Item	Item Lead	Deadline
ACTION ITEMS		
Provide turtle activity update	D. Barney	July
Check where upcoming RAB meeting times are posted	D. Barney	Next RAB
Distribute monthly Navy program status/administrative items update	D. Barney	July
UPDATES		
RAB Administrative Actions	D. Barney	Each RAB
MA DEP Update	D. Chaffin	Each RAB
Coast Guard Buoy Facility Update	R. Marino/J. Connet	Each RAB
IR Program Sites Update	D. Barney	Each RAB
MCP Release Areas Update	M. Leipert	Each RAB
EBS Review Item Areas/ Various Removal Action Update	M. Leipert	Each RAB
FOST/FOSL/CDR Update	D. Barney	Each RAB
SSTTDC Update	J. Lavin/ S. Ivas	Each RAB
COMPLETED ITEMS		
Provide RDA construction cost, cap design life, address safety issues (6/05)		
Provide copies of DoD directive regarding environmental issues (6/05)		
Provide DEP Small Landfill letter to M. Parsons and S. Ivas (6/05)		
Distribute monthly Navy program status/administrative items update (5/05)		
Provide Vortech system O&M handout to Navy (3/05)		
Provide a paper copy of SMP schedule to J. Cunningham (3/05)		
Provide completion date of draft base-wide assessment report (3/05)		
Post summarized version of DDA on SSTTDC Website (12/04)		
Check on seating capacity for Conference Center (12/04)		
Update RAB on BRAC conference (12/04)		
Check on analytical data from RIA 112 storm drain maintenance actions (12/04)		
Provide list of sites for L. Larrabee (12/04)		
Navy and consultant evaluate alternatives for reporting data on several metals for D. Wilmot (12/04)		
Provide sample ESCA from another Navy site to Mary Parsons/B. Sortin (12/04)		
Provide copy of EPA's June 14 Letter to Navy to M. Parsons		
Provide copy of Navy's June 24 Letter to SSTTDC to M. Parsons		
Provide data on RIA 4B surface water and sediment		
Provide analytical results for several metals to Dave Wilmot		
Check on whether any more barrels have been found at RDA		
Check on preliminary data from the Jet Fuel Pipeline Site		
Provide USGS with leads on sources of data for the Old Swamp River Study		
Compile and review available French Stream data – to be done as part of Basewide watershed study		

ATTACHMENT C

SLIDES FROM BASEWIDE ASSESSMENT PRESENTATION

Basewide Assessment Update
NAS South Weymouth
Restoration Advisory Board Meeting
August 11, 2005



Objective

- Update the RAB on the progress of the Navy's Basewide Assessment, which will consider the following elements:
  - Hydrogeological Evaluation
  - Watershed Evaluation
  - Geochemical Evaluation
  - Ecological Risk Assessment
- Basewide report to supplement ongoing MCP, CERCLA, and EBS programs

Data Management and Interpretation

- Substantial data sets exist from variety of environmental programs
  - CERCLA, MCP, EBS, Coast Guard
- Multiple rounds of sampling and analysis at many locations
  - 398 groundwater monitoring wells
  - 167 surface water sampling locations
  - 272 sediment sampling locations
  - 1,009 soil sampling locations

Approach

- Given substantial data synthesis and analysis challenges, an iterative approach with frequent Navy/agency interaction proposed
  - Compile existing data;
  - Prepare work plans;
  - Conduct limited and focused field program;
  - Compile newly collected data;
  - Data analysis and interpretation;
  - Review newly collected data in context of historical data;
  - Prepare interim deliverables with agency review;
  - Conduct additional data gap field work, if required;
  - Complete Basewide Report;
  - Risk Management/Supplemental Sampling, as required

SL99043

Hydrogeological Evaluation

- Designed to provide a broad interpretation of hydrogeological features:
  - Understanding of basewide groundwater flow through hydrogeologic units, including bedrock and over-burden
  - Initial phase of work will be conducted using existing information
  - Includes comprehensive synoptic water level gauging event and additional bedrock characterization
- Data will be used to assist with development of individual conceptual site models for remaining environmental sites

SL99043

Watershed Evaluation

- Will focus on the 2 major watersheds:
  - French Stream (EBS Study Area 62); and
  - Old Swamp River (EBS Study Area 104)
- Evaluation of potential risks to human health and the environment from exposure to surface water and sediment
  - Primarily relying on existing data
  - Screening level human health evaluation
  - Weight-of-Evidence aquatic and benthic receptor evaluation

Geochemical Evaluation

- Primary focus on orange "floc", which has been observed in French Stream and its tributaries
  - Considerable public/agency attention
- Working hypothesis is that "floc" is related to iron-rich groundwater being discharged to surface water bodies
  - May be associated with environmental activities
  - May be associated with historically filled wetlands
- May be naturally occurring (i.e., area was an "iron bog")

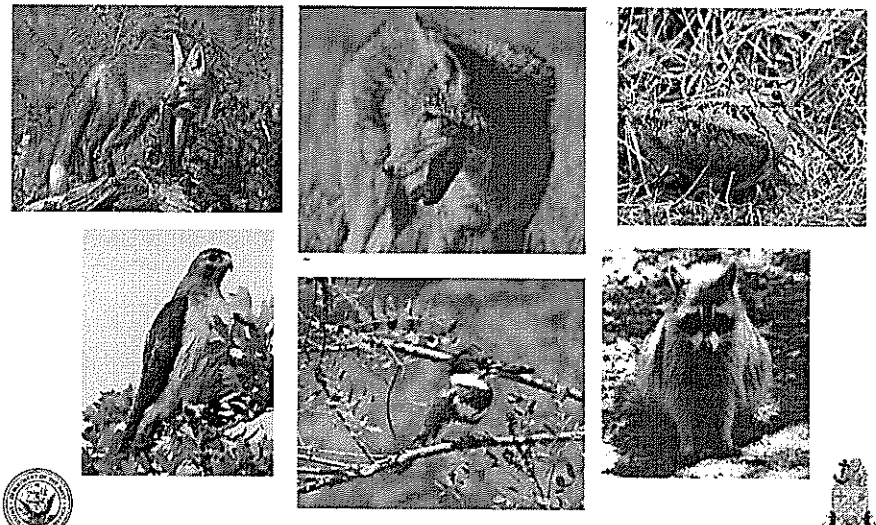
Geochemical Evaluation – Orange Floc

- What is the composition of the floc?
- What is the source of the constituents in the floc?
- What causes the floc to form in French Stream?
- What is the potential ecological impact associated with exposure to the floc?

Higher Trophic Level Risk Evaluation

- Will assess potential risks to vertebrate wildlife with large home ranges
  - Focus on carnivores and omnivores
  - Food chain uptake
    - » Considerable tissue residue data from base available
  - Persistent, bioaccumulative, and toxic chemicals
- Will rely on existing chemistry and biology data
- May involve complex modeling effort, depending upon initial findings

Basewide Food Chain Evaluation



Focused Field Program

- Field program to be initiated in Fall 2005
  - Bedrock mapping
  - Water level measurements from 150+ wells
  - Installation of 12 piezometers and staff gauges
  - French Stream monitoring
    - » Primarily focused on evaluating potential source(s) and composition of orange floc
    - » Mapping and sampling
    - » Groundwater/surface water interactions
    - » Seasonal changes

Summary

- Basewide work to focus on French Stream and Old Swamp River
  - Hydrogeologic, Watershed, Geochemical, and Ecological Risk evaluations to be considered
  - Orange "floc" recognized as a community concern -- hence focus in the Basewide Work plan
- Draft Final Work Plan in agency review
- Focused field program to be initiated in Fall 2005
- Iterative sampling, analysis, and data interpretation approach agreed to by all parties